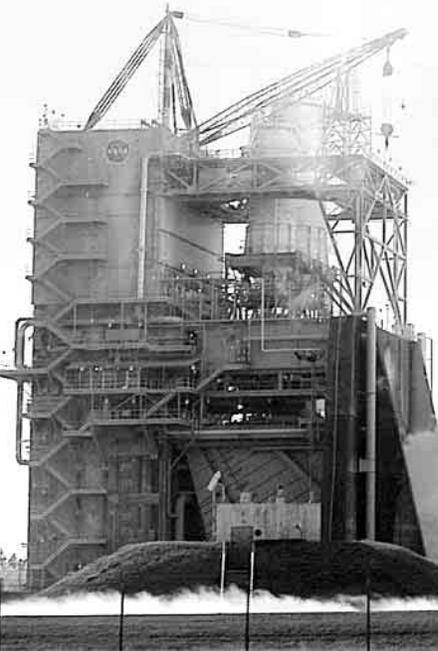




LAGNIAPPE

One in a million . . .

Space Shuttle Main Engine reaches milestone



A milestone in human spaceflight was achieved Wednesday, Jan. 21, at NASA Stennis Space Center (SSC): the 1 millionth second of successful test and flight operations of the Space Shuttle Main Engine (SSME).

The roar of the engine and its signature plume of water vapor began around 3:30 p.m. CST and ran for 8 1/2 minutes, the length of time it takes three SSMEs to propel the Space Shuttle from liftoff to orbit.

"This 1 millionth-second test is a testimony to the NASA and contractor team that developed, tested and continues to improve the SSME to safely take humans to low Earth orbit," said Miguel Rodriguez, director,

Propulsion Test Directorate. "It is a huge sense of pride to the NASA and Boeing team that the engines, which SSC began testing in June 1975, have never experienced a major anomaly. Personally, it is an honor to be part of this great program and NASA."

Rigorous testing, important to any flight program, is used to verify an engine is ready to fly. The result is an SSME that today is safer, stronger and more reliable than the one that flew on STS-1. STS stands for Space Transportation System, which includes all components of the Space Shuttle, including the SSMEs, the orbiter, the external fuel tank and the solid rocket boosters.

See **TEST**, Page 5



Stennis employees excited about America's new space plan

Applause rang out in the StenniSphere auditorium Jan. 14 as Stennis Space Center (SSC) employees watched President George W. Bush unveil a new vision for space exploration from NASA headquarters.

Bush called on NASA to "gain a new foothold on the Moon and to prepare for new journeys to the worlds beyond our own."

In his speech, the President said that the "new course for America's space program" would give NASA a

new focus and clear objectives for the future.

"We do not know where this journey will end," said Bush, "yet we know this: Human beings are headed into the cosmos."

The President's plan for steady human and robotic exploration is based on a series of goals.

First, he said, America will "finish what it started," completing the International Space Station by 2010.

Research on the Station will be focused on studying the long-term effects of space travel on humans,



SSC employees packed the StenniSphere auditorium Jan. 14 to watch a live NASA TV broadcast of President Bush outlining his new vision for the American space program, which includes sending Americans back to the Moon, and further to Mars.

preparing for the longer journeys of the future. After the Station is complete, the Space Shuttle would be

retired, after nearly 30 years of duty.

See **PLAN**, Page 7

*From the desk of
Stennis Space Center Director
Adm. Tom Donaldson*



Let me begin by saying how honored I am to take the helm as center director for the great team we have at Stennis Space Center.

I am also pleased to assume this role at such a momentous time for NASA. During my short tenure, NASA has successfully flown the Stardust spacecraft through the tail of a comet, landed the Spirit and Opportunity rovers on the surface of Mars, refocused its primary mission to the exploration and discovery of our solar system and we have successfully completed 1 million seconds of testing and flight operations on the Space Shuttle Main Engine (SSME). What a great start for a great organization!

To keep this momentum going, we need to stay focused on our core missions: rocket engine propulsion testing and Earth science applications. During the NASA Update on Jan. 15, Administrator O'Keefe talked about the top five themes that emerged from the Safety and Mission Success Week.

■ **Open Communications** – It is necessary to have communication with each other in a way that's constructive and focused on coming up with solutions to problems. We all should strive to promote an atmosphere where everyone believes they can offer their views.

■ **Decision Making Based on Analysis** – It is important that our judgments are based on significant contributing factors before reaching a conclusion. By using this method, once a decision has been made, then we can get on with business.

■ **Personal Responsibility** – Everyone within NASA bears a responsibility for their actions and how we conduct business. We should all feel personally responsible for the

loss of Columbia and look at everything we do in that manner. If a person sees something that's wrong, they have a responsibility to step up and act on it.

■ **Integrated Technical Competence** – The way we look at decision-making should integrate all the technical aspects that come into play. By doing so, we can then make an informed determination on which technical elements should be considered. We should also think constantly about where we can tap into the expertise to make a judgment. This is truly One NASA at work.

■ **Individual Accountability** – Being accountable for what we do is a mindset

everyone should adopt.

These themes also fit very well with the ESPRIT motto developed for Stennis. If we remember to keep Excellence, Safety, People, Respect, Integrity and Teamwork forefront in our daily tasks, then I expect nothing less than continued great things for Stennis Space Center.

I look forward to getting to know each and every one in the organization. This will be an exciting year as we prepare to Return to Flight, and Stennis will be a critical part of that effort. I'd like to end by thanking everyone involved in the successful 1 millionth-second SSME firing that occurred Jan. 21. It was a spectacular event accomplished with professionalism and style. Well done!

I look forward to getting to know each and every one in the organization. This will be an exciting year as we prepare to Return to Flight, and Stennis will be a critical part of that effort.

Return to Flight

Chiao replaces McArthur as next Space Station commander

Veteran NASA Astronaut Leroy Chiao will replace William S. McArthur Jr., as the commander of Expedition 9, the next mission aboard the International Space Station. The change in crew assignment is a result of a temporary medical issue related to McArthur's qualification for this long duration flight. As a member of the Expedition 9 backup crew, Chiao has been training alongside McArthur for months.

Stafford-Covey task group issues interim status report

The Stafford-Covey Return to Flight Task Group issued an interim report Tuesday, Jan. 20. The group is making an independent assessment of NASA's implementation of the Columbia Accident Investigation Board Space Shuttle Return to Flight recommendations. The task group's 78-page document is publicly available at: <http://returntoflight.org>.

Coleman named head of Marshall's external tank office

NASA veteran Sandra C. Coleman was named to run the office that is getting the Space Shuttle's external tank – a key element in the Columbia tragedy – ready to Return to Flight.

Coleman and James L. Reuter, who was named deputy manager, will be responsible for all development and manufacturing of the huge brown tanks, which are overseen by the Marshall Space Flight Center in Huntsville, Ala.

Space Shuttle Columbia crew memorialized on Mars

NASA Administrator Sean O'Keefe on Jan. 5 announced plans to name the landing site of the Mars Spirit Rover in honor of the astronauts who died in the tragic accident of the Space Shuttle Columbia in February. The area in the Gusev Crater where Spirit landed will be called the Columbia Memorial Station. A memorial plaque to Columbia's astronauts and the STS-107 mission is mounted on the back of Spirit's high-gain antenna, a disc-shaped tool used for communicating directly with Earth.

"What will I do today to help return to safe flight?"

*Sean O'Keefe
NASA Administrator*



We Have Friends In High Places

Space Station crew pinpoints leak, performs experiments

In an effort to gather more data regarding normal air pressure fluctuations onboard the International Space Station, Expedition 8 Commander Mike Foale and Flight Engineer Alexander Kaleri closed several interior hatches on Jan. 16.

Foale and Kaleri spent most of the following weekend in a smaller portion of the Station than usual, primarily the Zvezda living quarters module. Flight controllers monitored air pressure in the Station modules during that time to verify that the pressure aboard is stable and to gather baseline data on normal air pressure fluctuations in the complex.

For the data gathering session, the Station cabin has been divided into four sections. The one where the crew is staying includes Zvezda, the Soyuz spacecraft, the Pirs docking compartment and the Progress cargo vehicle. Another section includes the Unity connecting node and the Quest airlock. A third section is the Zarya control module and Pressurized Mating Adapter 1. The fourth section is the Destiny laboratory. All of the hatches were reopened Jan. 18.

On Jan. 11, Foale tracked down the probable cause of a slight pressure decay that had been detected aboard the station since late December. Foale found a leaking flex hose that is part of a system that prevents fogging within Destiny's window. The hose was removed and the leak stopped. Engineers are evaluating plans to launch a replacement hose on the next Progress supply vehicle.

Foale conducted his second session with the Foot/Ground Reaction Forces During Spaceflight (FOOT) experiment, gathering several hours of additional data. For the experiment, Foale dons a special pair of instrumented leggings that allow researchers to measure forces on the feet, joint angles and muscle activity. Foale also participated in a Hand Posture Analyzer investigation, which uses a special glove to assess the changes in how humans reach, grasp, manipulate and transport objects during long periods in weightlessness.

Director ready for a new challenge

Newly appointed NASA Stennis Space Center (SSC) Director Thomas Q. Donaldson V, RDML USN (Ret.) is no stranger to challenge.

He led the Naval Meteorological and Oceanography Command during the most tumultuous period for the U.S. military since the Vietnam War, including the Sept. 11, 2001, attacks on the World Trade Center and the subsequent wars in Afghanistan and Iraq. He's been to the bottom of the ocean, flown into a Category IV hurricane, sailed on six of the seven seas and traveled six of the seven continents.

Now President George W. Bush has set goals for NASA that could challenge the most veteran NASA space center director: manned missions to the Moon, Mars and beyond. Adm. Donaldson takes it head-on. "Nothing would please me more than testing big rocket engines that support our new missions of exploration and discovery," he said.

The response is in line with a basic tenet of the Admiral's professional philosophy developed through his naval career: "Take pride in your job, understand you are held to higher standards and always strive to exceed minimum requirements and expectations."

He doesn't expect the transition from military to civilian leadership to be difficult. "NASA is a professional organization serving our nation and leading the world in many efforts, but it's the outstanding people who make it happen," he said. "Everyone wants to help me do what's right. What's important in an organization is trust, reliability and focusing on the problem - and 85 percent of most problems are due to the system."

Born in a U.S. military hospital in Germany, Adm. Donaldson graduated from the U.S. Naval Academy in 1975. He holds a bachelor's degree in Oceanography from the U.S. Naval Academy, master's degrees in



Stennis Space Center Director Adm. Tom Donaldson

Physical Oceanography and Meteorology from the Naval Postgraduate School, and a master's degree in National Strategic Studies from the National War College in Washington, D.C.

The Admiral's experience leading the meteorologists and oceanographers in the Navy during the past six years has helped prepare him for the opportunities and challenges that lie ahead.

He's particularly excited about NASA's charter to inspire the next generation of engineers, scientists and explorers. "As a parent, I urge the younger generation to seek lives of significance and service," he said. "You can do both in NASA; it's a unique organization."

Adm. Donaldson is married to his high school sweetheart, Debbie. They have three children. "I can't tell you how thrilled I am to make such a big transition (from the Navy to NASA) with minimum impact to my family at a time when I can have a positive impact within NASA," he said. "We love it here. We've fallen in love with the community, the quality of life and the people of the Gulf Coast."

International remote sensing group tours SSC



Vicki Zanoni (left), NASA Earth Science Applications Directorate's program manager for verification and validation, and Mary Pagnutti of Lockheed Martin Space Operations discuss NASA Stennis Space Center's field calibration targets with Jaejung Kim and Moon-Gyu Kim. Zanoni and Pagnutti conducted lectures and guided facility tours Dec. 2 for attendees of the International Workshop on Radiometric and Geometric Calibration. The workshop, sponsored by NASA and the U.S. Geological Survey, was part of the efforts of the International Society for Photogrammetry and Remote Sensing (ISPRS) to standardize radiometric and geometric parameters of sensors.

NASA spacecraft land on Mars

Spirit and Opportunity: Roaming the Red Planet

NASA's Mars Exploration Program continues the quest to understand the role of water on Mars by placing roving robotic geologists on the surface of the planet. The first rover, Spirit, arrived Jan. 3, with the second, Opportunity, following on Jan. 24. Both rovers will analyze rocks and soils for three months, looking for clues to wet environments in the planet's past.

The rovers bounced to airbag-cushioned landings at locations selected for evidence of possible water activity in the Martian past.

Spirit landed at Columbia Memorial Station in the Gusev Crater, which appears to have been a crater lake flooded by means of a long channel of an ancient riverbed. Opportunity landed at Meridiani Planum, a site halfway around the planet from Gusev that is rich in a mineral that on Earth usually forms in a wet environment.



Above is pictured an artist's rendering of a Mars Exploration Vehicle on the surface of the Red Planet.

For power, each six-wheeled robot relies on a deck of solar panels as they roam the surface searching for interesting rocks. Each can detect hazards and maneuver around them, and extend an arm with tools on the end to inspect a selected rock.

Third-grade student names the rovers

NASA, in conjunction with The LEGO Co. and The Planetary Society, held a "Name the Rovers Contest." Out of more than 10,000 entrants, 9-year-old Sofi Collis, a Siberian immigrant who now lives in Scottsdale, Ariz., won with the following essay:

I used to live in an Orphanage. It was dark and cold and lonely. At night, I looked up at the sparkly sky and felt better. I dreamed I could fly there. In America, I can make all my dreams come true. . . Thank you for the 'Spirit' and the 'Opportunity.'

At right, Collis shakes hands with NASA Administrator Sean O'Keefe at a celebration congratulating her for naming the Mars rovers.



The history of NASA's successful Mars missions

For hundreds of years, the vast distance separating Earth from Mars restricted man's observations of the Red Planet. Until the launching of probes to Mars to collect and relay data back to Earth, much of what was known about Mars was based on fuzzy pictures which showed only large-scale planetary features and events.

So many questions had been raised about Mars, and the answers could only be found by direct observation.

The Mariner missions

Fueled by the curiosities of both the scientific community and the public, Mariner 4 was launched Nov. 28, 1964. Nearly eight months later, it would become the first spacecraft ever to visit the Red Planet, obtaining and transmitting close range images of Mars that revealed a cratered and moon-like surface.

Mariner 6 and Mariner 7 were identical spacecraft launched Feb. 24 and March 27, 1969, entirely devoted to the flyby study of Mars. Due to advances in technology, Mariner 6 and 7 were able to transmit data at a rate of almost 2,000 times that of Mariner 4.

Mariner 9, the first of NASA's Mars orbiters, was launched on May 30, 1971, and began the most ambitious Mars exploration mission yet attempted. By the end of 349 days in Mars orbit, 7,329 images had been relayed back to Earth.

The Viking program

The possibility of life on Mars was still an irresistible mystery, and the Viking program was

launched Aug. 20, 1975, with Viking 1 and Viking 2, which each consisted of an orbiter and a lander.

The results from the Viking experiments give our most complete view of Mars to date. Volcanoes, lava plains, immense canyons, cratered areas, wind-formed features and evidence of surface water are apparent in the orbiter images.

Pathfinder and Sojourner

Mars Pathfinder landed in the Ares Vallis region on the Red Planet July 4, 1996, and its Sojourner Rover rolled onto Mars' surface two days later.

The mission aimed to demonstrate the feasibility of low-cost landings on and exploration of the Martian surface. The extended mission included more analyses of nearby rock and soil and more tests of the rover capabilities. The Pathfinder mission, which operated three times longer than its original 30-day planned lifetime on the Martian surface, is acknowledged as one of NASA's most successful endeavors.



SSC plays vital role in history of NASA space flight



A cloud of extremely hot steam boils out of the flame deflector at the A-1 test stand during a test firing of a Space Shuttle Main Engine at SSC.

One of the foremost rocket test programs in the history of America began June 24, 1975, when engineers at NASA Stennis Space Center (SSC) performed the first ignition test of a Space Shuttle Main Engine (SSME).

Twenty-eight years and 1 million seconds of testing and flight operations later, the SSME is a safer, stronger and more reliable engine than the one that flew on STS-1, NASA's first Shuttle mission. STS stands for Space Transportation System, which includes all components of the Space Shuttle, including the SSMEs, the orbiter, the external fuel tank and the solid rocket boosters.

Rigorous testing, important to any flight program, is used to verify an engine is ready to fly. "One million seconds of Space Shuttle

Main Engine operation represents a significant achievement for the only reusable liquid rocket engine in the world," said Dave Geiger, SSC site director for The Boeing Co., which manufactures the SSME at its Rocketdyne Propulsion and Power unit in Canoga Park, Calif. "The energy and reliability demonstrated by this engine is representative of all the magnificent people who have worked on this amazing propulsion device since its beginning."

NASA chose SSC (then the Mississippi Test Facility) to conduct all sea-level testing of SSMEs on March 1, 1971, following the center's experience in successfully testing the Apollo/Saturn V boosters that took Americans to the Moon. By 1974 engineers were busy converting the stands to test SSMEs. In February 1975 a Memorandum of Agreement for the Space Shuttle Program was signed between SSC and NASA's manager of SSME testing, Marshall Space Flight Center.

By the time the 500th SSME test was conducted on Nov. 26, 1980, the main propulsion system's three-engine cluster had been successfully test

fired for a full eight-and-a-half minutes, the duration necessary to power a Shuttle from launch to orbit. Testing had also begun on engines for NASA's first Shuttle mission, STS-1, Space Shuttle Columbia. On April 12, 1981, Columbia successfully lifted off from Kennedy Space Center, Fla.

The Shuttle engine flying now – and the one that successfully reached the millionth second of testing and flight operations – incorporates the modifications made to the SSME without changing the basic operation of the staged combustion, liquid hydrogen-fueled engine. The result is a safe, strong, reliable, thoroughly tested engine that is ready to return the Space Shuttle to flight.



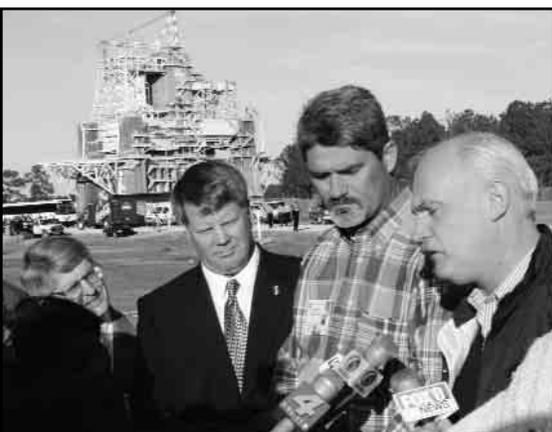
Space Shuttle Endeavour thunders into space, powered by three main engines and two solid rocket boosters. Stennis Space Center tests all main engines that power the orbiter during its 8 and 1/2 minute flight to orbit.



A remote camera captures a close-up view of a SSME during a test firing at SSC.



Above left, Bill Parsons (center) former SSC director who now serves as manager of the Space Shuttle Program, presented tokens of the millionth second test to SSC Director Adm. Tom Donaldson (left) and Marshall Space Flight Center Director Dave King.



At lower left, SSC Deputy Director David Throckmorton (left), Donaldson, Parsons and William Readdy, NASA Associate Administrator, Office of Space Flight, address members of the media.

TEST . . .

Continued from Page 1

The SSME has gone through major upgrades since the first Space Shuttle flight in 1981 through the first flight of the "Block II" SSME in 2001. The most important modifications were safety, reliability and life-span improvements in turbopump components – and improved sensors.

As recently as 1998, engineers developed and tested a large-throat main combustion chamber, which improved the SSME's reliability by

reducing operating temperature and pressures. A new high-pressure fuel turbopump was also developed.

The SSME tested during the millionth second of firing is a flight engine scheduled for launch on Space Shuttle Discovery, STS-121, which will be NASA's second Space Shuttle Mission after Return to Flight.

The Rocketdyne Propulsion and Power division of The Boeing Co. of Canoga Park, Calif., manufactures the SSME. Marshall Space Flight Center in Huntsville, Ala., manages



At left, NASA Astronauts Jerry Ross (left) and Chris Ferguson help inspire astronauts of the future attending the millionth-second test.

STARC contract called winning situation for SSC, workers



Vincent Leto (left), James Ferguson and Calvin Cousin, members of the STARC crew, police the grounds around Building 1203 at NASA Stennis Space Center.

A 6-month-old relationship between Mississippi Space Services (MSS) and the St. Tammany Association for Retarded Citizens Inc. (STARC) has already been hailed a win-win situation.

Since July, five STARC clients have worked three days a week at NASA Stennis Space Center (SSC), picking up litter. In that time, the crew has picked up more than 700 pounds of

cigarette butts, bottle caps and cash register receipts, among other things.

Under the supervision of Brad Beard, clients Bernal Lawrence Jr., Calvin Cousin, Vincent Leto, James Ferguson and Dwayne Smith have been busy picking up litter around various NASA buildings. The crew also points out potential safety hazards and maintenance needs.

Each crew member earns a paycheck, vacation time and benefits.

STARC is a private, non-profit association based in Slidell, La. Founded in 1972, it provides services and support that help people with mental retardation or developmental disabilities reach their potential as independent, contributing members of society. It provides services to more than 400 individuals in four Louisiana parishes through its programs, and maintains three community homes.

"The clients are very happy to be there," said Elenora Crawford, STARC's assistant program coordinator. "The work is meaningful for them; they get interaction with SSC staff, who couldn't be nicer. They feel very fortunate."

The temporary contract lasted from July to September, then was renewed in October for Fiscal Year 2004. NASA's Bob Jeffries, chief, Institutional Services Division, of SSC's Center Operations Directorate, helped implement the contract.

"The STARC program is an MSS initiative that NASA endorsed," Jeffries said. "It's one of those local community outreach programs that exemplifies a true win-win situation. The site benefits from the STARC personnel taking on the task of policing the grounds, and the local community benefits because this group of remarkable individuals has a chance to be productive."

'The site benefits from the STARC personnel taking on the task of policing the grounds, and the local community benefits because this group of remarkable individuals has a chance to be productive.'

Louisiana students see hybrid rocket motor demonstration

At right, ninth- through twelfth-grade students from Ponchatoula High School in Ponchatoula, La., watch a small hybrid rocket motor demonstration conducted by aerospace engineer Bob Field when they visited StenniSphere Dec. 18.

Research being done today will determine how hybrid rocket motors, which use a mixture of liquid and solid fuels, may one day lift the spacecraft of the future.



Star Scene at



Visitor Center

Dillard Saturday Science Academy participates in Astro Camp activities

At left, Corey Martin (left, foreground) and Charles Brumfield, both of New Orleans, La., are assisted in a flight activity by Astro Camp counselor Nate Gholston. Martin is a member of Dillard University's Saturday Science Academy, which visited StenniSphere Dec. 13.



Girl Scout units earn Aerospace badges

Below, Ceara Hall, 11, of Walker, La., tries her hand at the glove box inside a mock-up of the International Space Station. Hall and fellow members of Girl Scout Service Unit 624 visited StenniSphere on Jan. 10. The Girl Scouts from three Walker-area troops participated in activities that help them complete requirements toward their Aerospace Badges by seeing how astronauts live and work in space.



STENNISPHERE HOSTS THE JASON PROJECT

Students can work with leading scientists to conduct real research on a learning adventure through the wonders of Panama's rainforests - all from Stennis Space Center! StenniSphere will host live broadcasts of the JASON Project's "Rainforest at the Crossroads" Jan. 26-Feb. 6 for qualified educators and their students. The JASON Project enhances the classroom experience by enabling students and their teachers to study Earth in real time. Through video, print and interactive online curriculum units, fourth- through ninth-grade students can literally look over researchers' shoulders as they work, ask questions and assist in performing experiments.

Donaldson nominated for Coast community leadership award

NASA Stennis Space Center (SSC)

Director Thomas Q. Donaldson V, RDML USN (Ret) has been nominated to be a member of the South Mississippi Outstanding Community Leaders Class of 2003.

The awards are sponsored by the Biloxi (Miss.) Sun Herald newspaper and its sister publication, the Journal of South Mississippi Business. The publications aim to recognize out-



Adm. Tom Donaldson

standing business and community leaders in the region.

The nominations will be sent to a selection committee, and the selected winners will be announced at an awards breakfast Feb. 12 at the Edgewater Mall in Biloxi.

Winners will be enshrined in the Roland Weeks Hall of Fame, named for the longtime Sun Herald publisher and Gulf Coast resident.

SSC begins implementation stage of One NASA initiative

Editor's note: The following is one in a series of Lagniappe columns outlining the progress of the One NASA initiative.

After the successful rollout in November, a new phase of One NASA has begun at Stennis Space Center (SSC).

"This year, we will be entering into the implementation phase of our One NASA program," said Ron Magee, who leads One NASA efforts at SSC.

To aid SSC in its implementation efforts, a steering committee has been formed with representatives from various organizations within NASA.

The members are: John Roth, Business Management Directorate;

Michele Beisler, Propulsion Test Directorate; Craig Peterson, Earth Science Applications Directorate; Mike Rewis, Office of Safety and Mission Assurance; Peter Sulyma, Program Integration Office; and Rebecca Strecker, Office of External Affairs.

NASA's contractor community will be included in steering this effort through the NASA/NASA Contractor Forum.

"It is essential that we include everyone in the NASA family in moving One NASA from recommendations to reality," Magee said.

PLAN . . .

Continued from Page 1

Second, the United States will begin developing a new manned exploration vehicle, called the Crew Exploration Vehicle. The first craft to explore beyond Earth orbit since the Apollo days, the spacecraft would be developed and tested by 2008 and conduct its first manned mission no later than 2014.

Though its main purpose would be to leave Earth orbit, the vehicle would also ferry astronauts to and from the International Space Station after the shuttle is retired.

"Our third goal," Bush said, "is to return to the Moon by 2020, as the launching point for missions beyond."

He proposed sending robotic probes to the

lunar surface by 2008, with a human mission as early as 2015, "with the goal of living and working there for increasingly extended periods of time."

Bush said lunar exploration could lead to new technologies or the harvesting of raw materials that might be turned into rocket fuel or breathable air.

"With the experience and knowledge gained on the Moon," he said, "we will then be ready to take the next steps of space exploration: human missions to Mars and to worlds beyond."

The proposed funding for the new exploration initiative will total \$12 billion over the next five years, with much of it coming from reallocation of \$11 billion within NASA's current five-year budget. The President called on Congress to increase the agency's budget by

roughly \$1 billion spread over the next five years.

The President also announced the formation of a commission, headed by former Secretary of the Air Force Pete Aldrich, to advise him on the implementation of the new vision.

Bush closed by acknowledging the sacrifices of fallen astronauts and looking to the future.

"We choose to explore space because doing so improves our lives and lifts our national spirit," Bush said. "So let us continue the journey."

The President's Plan

- Complete International Space Station by 2010, retire Space Shuttle
- Develop and test new Crew Exploration Vehicle by 2008, with first flight by 2014
- Return to the Moon by 2020, with robotic exploration by 2008
- Plan extended human missions as early as 2020

NASA headquarters restructures management following Bush plan

In a move designed to align the agency with the new exploration agenda outlined by President George W. Bush, NASA Deputy Administrator Frederick D. Gregory announced a comprehensive restructuring of the offices within Headquarters in Washington.

The new alignment goes into effect immediately and reflects the new vision and the results of a comprehensive review of Headquarters operations.

Retired U.S. Navy Rear Admiral Craig E. Steidle is the new Associate Administrator, Office of Exploration Systems. The Office of Exploration Systems is established to set priori-

ties and direct the identification, development, and validation of exploration systems and related technologies.

Dr. J. Victor Lebacqz is the new Associate Administrator, Office of Aeronautics, previously known as the Office of Aerospace Technology. He served as Acting Associate Administrator of the Office of Aerospace Technology since July 2003. The new Office of Aeronautics was created to reflect NASA's commitment to aviation research and aeronautics technologies for the nation's civil and defense interests.

The Office of the NASA

Administrator will be streamlined to allow for more independent leadership in areas vital to the execution of NASA's vision and mission. Among the changes, four new independent offices will be created, including:

- The Office of Chief Engineer is established to ensure agency development efforts and mission operations are planned and conducted using sound engineering
- The Office of Health and Medical Systems is established to ensure the well-being of the NASA workforce and to provide independent oversight authority for health-care, related research and information

- The Office of the Chief Information Officer is established to manage the agency's Information Technology (IT) investments, lead the development of an IT strategic plan, and create a roadmap to guide the agency's IT programs and policies

- The Office of Institutional and Corporate Management is established to lead the oversight of NASA's management systems, institutional, and corporate activities.

Leadership for the new offices, as well as staffing requirements and resource allocations, will be addressed as the new alignment is implemented this calendar year.



Avoid back injury by using lifting methods

Back injuries are a leading cause of lost time from work. They can occur in all kinds of jobs, so it is important for everyone to understand how to lift safely.

First, plan your lift by determining if the load is too heavy, too big or too awkward to move alone. Plan the route that is to be taken, looking for any potential problems such as a slippery or uneven floor surface, or obstacles along the way. Don't forget to look at the area where the load is to be placed to determine if there are any obstructions that may cause problems.

The following tips outline proper lifting techniques:

- Get as close as possible to the load.
- Position your feet approximately shoulder-width apart. If necessary, straddle the load.
- Always bend your knees. Never bend from the waist or stretch out your upper body.
- Squat down, and lift the load by using the strength of your leg muscles, rather than your back.
- Never twist your body when carrying a load. If it is necessary to turn, move your feet, rather than your body.
- Before you start to move with the load, be sure you can see over it.
- When setting down the load, make sure you do not put strain on your back by bending over. Squat down again if necessary.

There's no point in getting a back injury by trying to be a hero with a heavy load. Get help if you need it. Two or more people can do a team lift. Mechanical aids such as a hand truck or pallet jack can also assist when lifting heavy loads.

QUICKLOOK

NASA disability awareness training will be held 9-11 a.m. and 1-3 p.m. Jan. 30 in the StenniSphere Auditorium. All NASA employees are asked to attend one of the sessions and learn about the accessibility options available and of the process for requesting accessibility.

The ODIN Alliance will offer professional development training in the following applications: Word 2000 Intermediate, Feb. 5; Outlook 2000 Introduction, Feb. 12; and Excel 2000 Intermediate, Feb. 25. All classes are 9 a.m.-4 p.m. For more information, call (228) 688-2525.

The Stennis Chapter of Blacks in Government (BIG) is offering a scholarship to the winner of its 10th annual oratorical contest scheduled for 11 a.m.-1 p.m. March 17 in the StenniSphere auditorium. The participants will deliver a speech to a panel of judges on the theme "Strategies for Successful Youth Development." The contest is open to students in grades 9 through 12. Applications are due March 6. For more information, call Leigh Chambers at (228) 688-5654 or e-mail chambersl@navo.navy.mil.

Astro Camp Saturday is now accepting applications for children ages 9-12 to attend the March 20 camp themed "Mission to Mars" and the April 17 camp, "Rocketry 101." The cost is \$50, including lunch and supplies. Weekly summer Astro Camps will be held June 7-11, June 21-25, June 28-July 2 and July 12-16 for ages 7 through 9, and July 19-23 and July 26-30 for ages 10 through 12. Summer sessions are 9 a.m.-4 p.m. Monday through Friday. For more information, call StenniSphere at (228) 688-2370.



Roaming the Red Planet: MARS 2004

On Jan. 3, the rover Spirit landed on the Martian surface in search of answers about the history of water on Mars. Its twin rover, Opportunity, landed Jan. 24. In support of NASA's Mars Exploration Program, LAGNIAPPE offers trivia questions about the mysterious Red Planet each issue during the rovers' mission.

Q. What was NASA's first successful Mars mission, and what did it accomplish?

A. Mariner 4, launched Nov. 28, 1964, was the first spacecraft to obtain and transmit close range images of Mars. The probe also conducted field and particle experiments, including measurements of the Martian magnetic field, cosmic dust and cosmic rays, and the solar wind. The mission also provided NASA with experience in operational and engineering techniques required for long-term interplanetary missions.

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